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ABSTRACT

A study examined the types of vocational education programs offered in rural, suburban, and urban schools. Data from the 1999 Survey on Vocational Programs in Secondary Schools indicate no significant differences in the distribution of vocational education offerings in urban and suburban schools, so they were combined into a single category of nonrural schools that was compared to rural high schools. Rural schools were less likely than nonrural schools to offer programs for four of the five listed technical occupations, all four listed service occupations, and three of the four listed mechanical occupations. Rural schools were also less likely than nonrural schools to offer three of the six listed programs for health and life science occupations, including the relatively common nurse/nurse's aide programs, and two of the four programs for business and marketing occupations. Rural schools were as likely as nonrural schools to offer the two most common business and marketing programs and all five building trade programs. Rural schools were more likely than nonrural schools to offer welding and agriscience programs. An average of 25 percent of programs offered by nonrural schools were for projected fast-growing occupations, compared to 17 percent for rural schools. These differences do not necessarily mean that rural schools are less responsive to the labor market than other schools--they could reflect labor market differences in rural and nonrural areas. (TD)

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Issue Brief

Vocational Education Offerings in Rural High Schools

July 2002

A great deal is known about high school vocational coursetaking, including which students take more rather than less vocational education (see Levesque et al. 2000; Tuma 1996). Less is known about vocational education offerings and the types of schools that provide various types of vocational education programs. To help fill this gap, this Issue Brief uses data from the 1999 "Survey on Vocational Programs in Secondary Schools" (see Phelps et al. 2001) to examine systems for delivering vocational education and the offerings provided by public high schools in urban, suburban, and rural areas.[1] Schools in these areas are likely to differ in the nature of their local labor markets, and thus in the demand for vocational education faced by schools. In particular, many rural areas are likely to have labor markets that are less diverse than those in suburban and urban areas. Vocational offerings also might be more limited in rural areas compared to urban and suburban areas in part because rural high schools tend to be smaller than high schools in other areas. In 1998–99, for example, the average student enrollment in rural public high schools was 437, compared to 1,120 for schools in suburban and urban areas. Assuming rural schools do have more limited vocational offerings, a subsequent issue of interest is the likelihood that rural schools offer certain types of programs. This Issue Brief examines these issues.

The 1999 "Survey on Vocational Programs in Secondary Schools"

This survey asked administrators of public high schools to classify their school as "comprehensive" or "vocational" in focus.[2] The survey also included a list of 28 selected occupations that typically require less than a baccalaureate degree. School administrators were asked to identify for which of the 28 selected occupations their school offered a vocational education program (defined as a sequence of courses within an occupational preparation area) in 1998–99 (tables 1 and 2). The survey included the most common occupations for which vocational education prepares students at the high school level, but it did not include all possible occupations for which schools may have vocational offerings. However, based on analyses of public high school transcripts, the information derived from this survey describes the vast majority of high school vocational education offerings.[3]

Systems for Delivering Vocational Education

According to the "Survey on Vocational Programs in Secondary Schools," almost 90 percent of U.S. public high schools in 1998–99 were comprehensive high schools rather than vocational schools (table 1). The remaining 11 percent of schools were roughly evenly split between area or regional vocational schools (which typically serve students on a part-time basis) and full-time vocational high schools.

Table 1.—Percentage distribution of public high schools, by type, and percent offering at least one vocational education program for any of the 28 selected occupations, overall and by locale: 1998–99

	Percentage distribution of public high schools			
Locale	Area or regional vocational school	Vocational high school	Comprehensive high school	Percent of schools offering at least one program
Overall /all areas	6.2	4.6	89.2	66.5
Urban areas	5.5	10.3	84.2	72.9
Suburban areas	5.9	4.4	89.7	63.9
Rural areas	6.6	3.1	90.3	66.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Vocational Programs in Secondary Schools," 1999.

Among comprehensive high schools, only 63 percent offered at least one program for any of the 28 selected occupations (Phelps et al. 2001). Some comprehensive schools that do not offer these programs might offer individual vocational education courses rather than programs. In addition, some may offer students access to vocational education programs at area or regional vocational schools.[4] Thus, student access to vocational education is more widespread than is indicated by schools' program offerings. As evidence of this widespread access, 91 percent of 1998 public high school graduates earned credits in occupational coursework.[5]

The systems used to deliver vocational education were slightly different in urban areas than in suburban and rural areas (table 1). Urban areas had a higher proportion of *vocational high schools* than did suburban areas and rural areas, possibly because urban areas were more likely to use

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vocational high schools as magnet schools. Nonetheless, there were no (statistically) detectable differences among urban, suburban, and rural areas in the percentage of high schools that offered at least one of the listed vocational programs.* However, the number of programs offered and the specific programs offered did vary across locales, as discussed below.

Occupational Offerings by Locale

An initial analysis comparing the distribution of vocational education offerings in urban, suburban, and rural areas revealed no differences between urban and suburban areas (data not shown). Thus, for this Issue Brief, urban and suburban high schools were combined into a single category (nonrural schools) that was compared to rural high schools. Table 2 shows the percentage of public high schools that offered at least one program for each of the 28 selected occupations, for schools overall and separately for rural schools and nonrural schools.

On average, rural high schools offered at least one program for fewer of the selected occupations than did nonrural high schools—an average of 3.7 occupations in rural schools versus 4.8 in nonrural schools.* This difference reflects a lower proportion of rural schools offering programs for most of the listed occupations (16 of the 28), rather than differences in a few offerings. Specifically, rural schools were less likely than nonrural schools to offer programs for four of the five listed technical occupations, all listed service occupations, and three of the four listed mechanical occupations. Rural schools also were less likely than nonrural schools to offer three of the six listed programs for health and life science occupations, including the relatively common nurse/nurse's aide programs, and two of the four programs for business and marketing occupations (sales associate and restaurant/food service manager).

On the other hand, rural schools were as likely as nonrural schools to offer the two most common business and marketing programs (accountant/bookkeeper and administrative assistant/secretary) and were at least as likely as nonrural schools to offer all listed programs in the building trades. Rural schools were *more* likely than nonrural schools to offer vocational education programs for welding and for agriscience. The greater propensity of rural schools to offer vocational programs for these two fields would seem to reflect labor market differences between rural and nonrural areas—specifically, the concentration of agribusiness in rural areas.

Other factors also could contribute to this pattern of offerings. One hypothesis suggested by the findings is that vocational education programs for expanding occupations (e.g., in technical and health fields) are less commonly offered in rural schools. One way to examine this issue is to compare schools' offerings for occupations that are growing at a relatively fast rate. Of the 28 selected occupations, 10 were projected by the Bureau of Labor Statistics to be fast growing (defined as having a projected growth rate of over 20 percent from 1996 to 2006; Bureau of Labor Statistics 1998) (table 3). Among the public high schools that offered at least one program for any of the 28 selected occupations, an average of 25 percent of the programs offered by nonrural schools were programs for these projected fast-growing occupations, compared to 17 percent for rural schools. In other words, the programs offered by nonrural schools were more likely than those offered by rural schools to be programs that prepare students for occupations expected to be fast growing. This difference in offerings does not necessarily mean that rural schools are less responsive to the labor

Table 2.—Percent of public high schools offering at least one program for each of the 28 selected occupations, overall and by locale: 1998–99

Program for	All schools	Rural schools	Nonrural schools
Technical occupations			
Drafter or CADD operator	31.8	28.3	35.0
Computer/electronics technician*	14.2	9.7	18.4
Computer graphic designer*	13.3	7.6	18.5
Computer programmer*	11.4	8.3	14.3
Engineering technician*	2.8	1.6	3.9
Service occupations			
Chef/cook*	20.3	16.4	24.0
Childcare worker or teacher's aide*	20.0	15.3	24.5
Cosmetologist*	9.2	5.0	13.2
Paralegal/legal assistant*	1.9	1.0	2.6
Mechanical occupations			
Auto body repairer	10.6	8.7	12.4
Automotive mechanic/technician*	27.1	22.5	31.4
Machinist*	9.9	7.5	12.1
AC/heating/refrigeration repair technician*	4.2	1.8	6.5
Health/life science occupations			
Agriscience technician*	13.6	16.8	10.5
Emergency medical technician	6.3	5.0	7.5
Veterinary assistant	6.1	5.4	6.7
Nurse or nurse's aide*	19.2	15.3	22.9
Medical/dental assistant*	9.1	5.1	12.9
Medical/life science lab technician*	4.3	2.4	6.0
Business/marketing occupations			
Accountant/bookkeeper	46.3	46.7	45.9
Administrative assistant/secretary	35.8	33.0	38.4
Sales associate*	17.0	10.7	22.8
Restaurant/food service manager*	14.0	9.6	18.0
Building trades			
Welder*	23.3	28.2	18.7
Carpenter	28.0	29.6	26.5
Electrician	12.9	12.6	13.2
Bricklayer or mason	7.7	6.5	8.8
Plumber	6.8	7.2	6.4

*The percentages of rural and nonrural schools with programs for these occupations were statistically different. All other differences between rural and nonrural schools were not statistically different.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Vocational Programs in Secondary Schools," 1999.

Table 3. —List of fast-growing and other occupations, by the likelihood that rural public high schools offered at least one vocational education program for that occupation: 1998–99

	Fast-growing occupations	Other occupations
Rural schools less likely than nonrural schools to offer at least one vocational program for:	Computer/electronics technician Computer graphic designer Computer programmer Childcare worker or teachers' aide Paralegal/legal assistant Nurse or nurses' aide Medical/dental assistant Restaurant/food service manager	Engineering technician Chef/cook Cosmetologist Automotive mechanic/technician Machinist AC/heating/refrig. repair technician Medical/life science lab technician Sales associate
Rural schools and nonrural schools are equally likely to offer at least one vocational program for:	Emergency medical technician Veterinary assistant	Drafter or CADD operator Auto body repairer Accountant/bookkeeper Administrative assistant/secretary Carpenter Electrician Bricklayer or mason Plumber
Rural schools are more likely than nonrural schools to offer at least one vocational program for:		Agriscience technician Welder

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Vocational Programs in Secondary Schools," 1999, and U.S. Bureau of Labor Statistics, *Occupational Outlook Quarterly*, Spring 1998, pp. 3–39.

market than are other schools. Instead, this difference in offerings could reflect labor market differences in rural and nonrural areas.

[1] Areas were categorized using U.S. Census Bureau definitions. *Urban* areas are defined as large or mid-size central cities. *Suburban* areas are the urban fringes of large and mid-size cities, as well as large towns and rural communities located within metropolitan areas. *Rural* areas are small towns and communities outside of metropolitan areas with populations of less than 25,000.

[2] In this survey, comprehensive schools included all high schools that were not vocational in focus. Special or alternative education schools were not separately classified. Vocational schools were self-classified as (1) area or regional vocational schools or (2) vocational high schools.

[3] The missing program areas include transportation, protective services, and some areas within precision production and communications technology. Based on analyses of the 1998 High School Transcript Study, these missing programs include less than 10 percent of students' occupational coursetaking.

[4] In 1991, over half of all public school districts offered students access to area or regional vocational schools (Office of Educational Research and Improvement 1994).

[5] U.S. Department of Education, National Center for Education Statistics, High School Transcript Study, 1998. Occupational courses include all courses within the "specific labor market preparation" section of the vocational education curriculum in the NCES Secondary School Taxonomy (Bradby and Hoachlander 1999).

[6] These estimates had relatively large standard errors, which may in part explain why the apparent differences between urban areas and suburban and rural areas were not statistically different.

[7] U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Vocational Programs in Secondary Schools," 1999.

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